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EXAMINER

MASUR, PAUL H

ART UNIT	PAPER NUMBER
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2464

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/585,713

Applicant(s)

CHINEA ET AL.

Examiner

Paul Masur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. **Claims 10-23 are pending.** Claims 1-9 have been previously cancelled.

Response to Arguments

2. **Applicant's arguments, see page 7, filed 02/09/2011, with respect to 35 U.S.C. § 112, 2nd paragraph have been fully considered and are persuasive.** The rejection of claims 10-23 has been withdrawn.
3. **Applicant's arguments, see page 7, filed 02/09/2011, with respect to claim objections have been fully considered and are persuasive.** The objection of claim 23 has been withdrawn.
4. **Applicant's arguments filed 02/09/2011 have been fully considered but they are not persuasive.**
5. **On page 8 of the remarks, in regard to claim 10,** the applicant submits that the reference Beshai-1 fails to teach or disclose *"the sending network node receives information regarding a blocking time while transmitting the first data burst."* The applicant also submits that Beshai-1 fails to teach or disclose a similar claim limitation in claim 23. To support this assertion, the applicant notes that Fig-26A of Beshai-1 contains a "delay" where there is a wait for a confirmation. In addition, the applicant submits that Beshai-1 fails to teach or disclose *"transmitting a second data burst from the sending network node to the receiving network node immediately after expiration of the blocking time."* The applicant notes that when the blocking time is zero, Beshai-1 fails to disclose the claim limitation.

The examiner respectfully disagrees. The examiner respectfully submits that limitation *“the sending network node receives information regarding a blocking time while transmitting the first data burst”* is recited after *“transmitting a first data burst”*. While the rejection was written with the teachings of Beshai-1 listed first, it would be obvious to incorporate the teachings of the secondary reference when considering the limitation. Therefore, this step is being performed after the transmission disclosed by Beshai-2. In this light, the examiner relies on this teaching for the delay that the schedule provides, which functions as the blocking time. In regard to a blocking time being zero, a delay may also be zero.

6. **On pages 9 and 10 of the remarks,** in regard to claim 10, the applicant submits that Beshai-2 fails to teach or disclose *“transmitting a second data burst from the sending network node to the receiving network node immediately after expiration of the blocking time”*. The applicant also submits that Beshai-1 fails to teach or disclose a similar claim limitation in claims 21 and 23. In addition, the applicant notes that the combination of Beshai-1 and Beshai-2 indicate that the blocking time information is transmitted on the same plane as the data burst transmissions. The applicant notes that this differs from their invention and would insert additional gap between consecutive data bursts.

The examiner respectfully disagrees. Since the gap time can vary according to the broadest reasonable interpretation, the combination of Beshai-1 and Beshai-2 teaches the claim limitations. However, the examiner believes that, if the applicant were to further amend the claims to recite how the reservation request and acknowledgement

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signals are used to indicate the blocking times by using a signaling overhead, the current ground of rejection would be overcome. Transmitting these signals through the use of a signaling overhead does not interfere with the transmissions in the time interval. The examiner notes that this part of the applicant's invention is disclosed in paragraphs 0015 and 0016 of their printed publication.

7. **On pages 10 and 11 of the remarks, in regard to claims 11-14, 20 and 22,** the applicant submits that at least due to the deficiencies in regard to claim 10, these claim are allowable.

The examiner respectfully disagrees. The examiner kindly directs the applicant to the reasoning detailed above.

8. **On page 11 of the remarks, in regard to claims 15-17,** the applicant submits that at least due to the deficiencies in regard to claim 10, these claim are allowable.

The examiner respectfully disagrees. The examiner kindly directs the applicant to the reasoning detailed above.

Claim Rejections - 35 USC § 103

9. **The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:**

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 10-14 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beshai et al. (US PG Pub 2008/0165688, which was cited in the**

previous action and will be referred to as “Beshai-1”) in view of Beshai et al. (US Patent 7,397,792 which will be referred to as “Beshai-2”)

11. **As per claim 10**, Beshai-1 teaches a method for transmitting a data burst between a sending network node and a receiving network node over a switching device of a data network, comprising:

receiving information by the sending network node regarding a blocking time while transmitting the first data burst [Beshai-1, fig. 26-A, “Send Schedule”, The edge determines the blocking time from the schedule that is sent by the core.];

waiting for expiration of the blocking time [Beshai-1, fig. 26-A, “Delay”, paragraph 0184, “an edge node 208 sends a request to a core node 312 for permission to transfer a data burst and waits until the permission is received”, The time that the edge waits after receiving the schedule is the blocking time,]; and

transmitting a second data burst from the sending network node to the receiving network node [Beshai-2, fig. 26-A, “Transmit Burst”].

Beshai-1 does not teach transmitting a first data burst...immediately after the first data burst. However, Beshai-2 teaches transmitting a first data burst...immediately after the first data burst [Beshai-2, fig. 12B, column 18, lines 30-35, “A connection may be allocated several time slots per TDM frame as illustrated in FIG. 12B where a connection may have one to four time slots. At least one time slot per TDM frame, herein called a control time slot, may be used for communicating control signals”, A first burst and a schedule for the connection share a time slot, where further data bursts follow.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Beshai-2 into Beshai-1, since Beshai-1 suggests sending packet bursts according to a defined protocol, and Beshai-2 contains teachings from the same inventor which suggest organizing bursts and scheduling according to a particular protocol in the analogous art of optical burst switching.

12. **As per claim 11**, Beshai-1 in view of Beshai-2 teach the method according to claim 10. Beshai-1 also teaches further comprising transmitting a remaining blocking time of an available connection between the sending and receiving nodes to the sending network node [Beshai-1, fig. 26-A, paragraph 0184, "Each edge node 208 would continually send such requests", More scheduling requests are sent to determine remaining connection time.].

13. **As per claim 12**, Beshai-1 in view of Beshai-2 teach the method according to claim 11. Beshai-1 also teaches further comprising transmitting to the sending network node both:

the point in time of the beginning of an available connection or the blocking time until the beginning of an available connection [Beshai-1, fig. 26-A, paragraph 0184, "A reserved path remains idle until the edge node starts transmitting the burst", The connection remains idle (blocking time) until the sending node sends the burst.], and

the point in time of the termination of the available connection or the duration of the available connection or a length of time until the end of the available connection are transmitted to the sending network node [Beshai-1, fig. 27, paragraph 0185, "The burst-

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width variation, as illustrated by the indicated envelope of burst-width variation with time, reflects time-varying flow-rate allocations”, The length of the burst (which is dependent on the connection) is dependent on time.].

14. **As per claim 13**, Beshai-1 in view of Beshai-2 teach the method according to claim 12. Beshai-1 also teaches wherein the blocking time [Beshai-1, fig. 26-A, paragraph 0184, “A reserved path remains idle until the edge node starts transmitting the burst”, The connection remains idle (blocking time) until the sending node sends the burst.] and the remaining connection time for a connection are transmitted to the sending network node [Beshai-1, fig. 27, paragraph 0185, “The burst-width variation, as illustrated by the indicated envelope of burst-width variation with time, reflects time-varying flow-rate allocations”, The length of the burst (which is dependent on the connection) is dependent on time.].

15. **As per claim 14**, Beshai-1 in view of Beshai-2 teach the method according to claim 11. Beshai-1 also teaches wherein the sending network node sends a reservation request via the switching device to the receiving network node [Beshai-1, fig. 26-A, “Send Schedule”, The edge determines the blocking time from the schedule that is sent by the core (which also function as the receiving device).].

16. **As per claim 20**, Beshai-1 in view of Beshai-2 teach the method according to claim 13. Beshai-1 also teaches wherein the data bursts are transmitted over an optical data network [Beshai-1, paragraph 0009, “A network providing optical burst switching in the core requires flow-rate regulation at the electronic edge nodes to enable contention-free switching at subsequent core nodes”].

17. **As per claim 21**, Beshai-1 teaches a method for transmitting a data burst between a sending network node and a receiving network node over a switching device of a data network, comprising:

transmitting to the sending network node information including the point in time of the beginning of an available connection or a blocking time of the existing connection until the beginning of an available connection [Beshai-1, fig. 26-A, paragraph 0184, "A reserved path remains idle until the edge node starts transmitting the burst", The connection remains idle (blocking time) until the sending node sends the burst.], and

the point in time of the termination of the available connection or the duration of the available connection or a length of time until the end of the available connection [Beshai-1, fig. 27, paragraph 0185, "The burst-width variation, as illustrated by the indicated envelope of burst-width variation with time, reflects time-varying flow-rate allocations", The length of the burst (which is dependent on the connection) is dependent on time.];

receiving said information by the sending network node implying the blocking time while transmitting the first data burst [Beshai-1, fig. 26-A, "Send Schedule", The edge determines the blocking time from the schedule that is sent by the core.];

waiting for expiration of the blocking time [Beshai-1, fig. 26-A, "Delay", paragraph 0184, "an edge node 208 sends a request to a core node 312 for permission to transfer a data burst and waits until the permission is received", The time that the edge waits after receiving the schedule is the blocking time.]; and

transmitting a second data burst from the sending network node to the receiving network node [Beshai-1, fig. 26-A, "Transmit Burst"].

Beshai-1 does not teach transmitting a first data burst...immediately after the first data burst. However, Beshai-2 teaches transmitting a first data burst...immediately after the first data burst [Beshai-2, fig. 12B, column 18, lines 30-35, "A connection may be allocated several time slots per TDM frame as illustrated in FIG. 12B where a connection may have one to four time slots. At least one time slot per TDM frame, herein called a control time slot, may be used for communicating control signals", A first burst and a schedule for the connection share a time slot, where further data bursts follow.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Beshai-2 into Beshai-1, since Beshai-1 suggests sending packet bursts according to a defined protocol, and Beshai-2 contains teachings from the same inventor which suggest organizing bursts and scheduling according to a particular protocol in the analogous art of optical burst switching.

18. **As per claim 22**, Beshai-1 in view of Beshai-2 teach the method according to claim 21. Beshai-1 also teaches wherein the blocking time is the time duration till the next permissible data burst transmission [Beshai-1, fig. 26-A, "Delay", paragraph 0184, "an edge node 208 sends a request to a core node 312 for permission to transfer a data burst and waits until the permission is received", The time that the edge waits after receiving the schedule is the blocking time.].

19. **As per claim 23**, Beshai-1 teaches a method for transmitting a data burst between a sending network node and a receiving network node over a switching device of a data network, comprising:

transmitting to the sending network node information containing the point in time of the beginning of an available connection or a remaining blocking time of an existing connection, and the duration of the available connection [Beshai-1, fig. 26-A, paragraph 0184, "A reserved path remains idle until the edge node starts transmitting the burst", The connection remains idle (blocking time) until the sending node sends the burst.];

receiving said information by the sending network node said information implying the blocking time while transmitting the first data burst [Beshai-1, fig. 26-A, "Send Schedule", The edge determines the blocking time from the schedule that is sent by the core.];

waiting for expiration of the blocking time [Beshai-1, fig. 26-A, "Delay", paragraph 0184, "an edge node 208 sends a request to a core node 312 for permission to transfer a data burst and waits until the permission is received", The time that the edge waits after receiving the schedule is the blocking time.]; and

then transmitting a second data burst from the sending network node to the receiving network node [Beshai-1, fig. 26-A, "Transmit Burst"].

Beshai-1 does not teach transmitting a first data burst...immediately after the first data burst. However, Beshai-2 teaches transmitting a first data burst...immediately after the first data burst [Beshai-2, fig. 12B, column 18, lines 30-35, "A connection may be allocated several time slots per TDM frame as illustrated in FIG. 12B where a

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connection may have one to four time slots. At least one time slot per TDM frame, herein called a control time slot, may be used for communicating control signals”, A first burst and a schedule for the connection share a time slot, where further data bursts follow.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Beshai-2 into Beshai-1, since Beshai-1 suggests sending packet bursts according to a defined protocol, and Beshai-2 contains teachings from the same inventor which suggest organizing bursts and scheduling according to a particular protocol in the analogous art of optical burst switching.

20. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beshai et al. (US PG Pub 2008/0165688, which was cited in the previous action and will be referred to as “Beshai-1”) in view of Beshai et al. (US Patent 7,397,792 which will be referred to as “Beshai-2”) and Oh et al. (US PG Pub 2003/0099243, which was cited in the previous action).

21. **As per claim 15**, Beshai-1 in view of Beshai-2 teach the method according to claim 14. Beshai-1 does not teach wherein a desired length of time until a subsequent data burst is sent in the reservation request.

However, Oh et al. teaches wherein a desired length of time until a subsequent data burst is sent in the reservation request [Oh, paragraph 0010, “It reserves the bandwidth on each link just for the data burst duration”, In the request, the desired burst time is stated.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Oh et al. into Beshai-1 since Beshai-1 suggests sending packet bursts according to a defined protocol, and Oh et al. suggests the beneficial use of a desired length of time between bursts such as to prevent congestion [Oh, paragraph 0010] in the analogous art of optical burst switching.

22. **As per claim 16**, Beshai-1 in view of Beshai-2 and Oh et al. teach the method according to claim 15. Beshai-1 also teaches wherein the data burst is transmitted via a plurality of switching devices [Beshai-1, fig. 26-A, An optical network comprises multiple switching devices.].

23. **As per claim 17**, Beshai-1 in view of Beshai-2 and Oh et al. teach the method according to claim 15. Beshai-1 does not teach wherein each switching device determines and transmits the longest remaining blocking time to the next switching device or the receiving network node.

However, Oh et al. teaches wherein each switching device determines and transmits the longest remaining blocking time to the next switching device or the receiving network node [Oh, paragraph 0010, “The control packet contains information necessary for routing the data burst through the optical channel, as well as information on the length of the burst and the offset value”, Through the duration and offset, a maximum time is determined pass through the network.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Oh et al. into Beshai-1, since Beshai-1 suggests sending packet bursts according to a defined protocol, and Oh et al.

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suggests the beneficial use of a desired length of time between bursts such as to prevent congestion [Oh, paragraph 0010] in the analogous art of optical burst switching.

24. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beshai et al. (US PG Pub 2008/0165688, which was cited in the previous action and will be referred to as “Beshai-1”) in view of Beshai et al. (US Patent 7,397,792 which will be referred to as “Beshai-2”), Oh et al. (US PG Pub 2003/0099243, which was cited in the previous action), and Craddock et al. (US PG Pub 2003/0035433, which was cited in the previous action).

25. **As per claim 18**, Beshai-1 in view of Beshai-2 and Oh et al. teach the method according to claim 15. Beshai-1 does not teach wherein during an acknowledgement signal the receiving end node sends the remaining time till an available connection to the sending network node via the switching devices and the switching devices reserve the transmission capacity.

However, Craddock et al. teaches wherein during an acknowledgement signal the receiving end node sends the remaining time till an available connection to the sending network node via the switching devices and the switching devices reserve the transmission capacity [Craddock, paragraph 0083, “End-to-end (EE) contexts maintain end-to-end specific state to keep track of sequence numbers, acknowledgments, and time-out values”, End-to-End contexts determine the time remaining and the capacity.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Craddock et al. into Beshai-1, since Beshai-1 suggests sending packet bursts according to a defined protocol, and Craddock

et al. suggests the beneficial use of End-to-End contexts such as to track network variables [Craddock, paragraph 0083] in the analogous art of optical networks.

26. **As per claim 19**, Beshai-1 in view of Beshai-2 and Oh et al. teaches the method according to claim 18. Beshai-1 does not teach wherein the reserved transmission capacity is based on the remaining time information.

However, Craddock et al. teaches wherein the reserved transmission capacity is based on the remaining time information [Craddock, paragraph 0083, “End-to-end (EE) contexts maintain end-to-end specific state to keep track of sequence numbers, acknowledgments, and time-out values”, End-to-End contexts determine the time remaining and the capacity.].

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Craddock et al. into Beshai-1, since Beshai-1 suggests sending packet bursts according to a defined protocol, and Craddock et al. suggests the beneficial use of End-to-End contexts such as to track network variables [Craddock, paragraph 0083] in the analogous art of optical networks.

Conclusion

27. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. **The Examiner has cited particular columns and line numbers or paragraphs in the references applied to the claims above for the convenience of the applicant.** Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, the Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

29. **If the Applicant is of the opinion that an interview would help advance prosecution in this case, they are welcome to call the Examiner, Paul Masur, at the number listed below to schedule an interview.** The Examiner prefers interview requests be accompanied with a detailed agenda via fax. The Examiner's fax number is (571) 270-8297. The Examiner is willing to consider proposed amendments, clarify rejections, and discuss any other issues that are presented by the Applicant. Please

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note that the Examiner may not be able to accommodate all requests due to scheduling constraints. It is recommended that interview requests be sent with ample time to schedule an interview.

30. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Masur whose telephone number is (571) 270-7297. The examiner can normally be reached on Monday through Friday from 7:30 AM to 5 PM (Eastern Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2464

/P. M./
Examiner, Art Unit 2464